

ADDENDUM 5 TO APPENDIX 5 TO SCHEDULE 3.3 TO THE
COMPREHENSIVE INFRASTRUCTURE AGREEMENT
STATEMENT OF TECHNICAL APPROACH

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Statement of Technical Approach for Desktop Computing Services

The desktop service area delivers a common desktop operating environment to enable VITA and its customer's access to business and productivity applications. Northrop Grumman's systems management solution is a suite of integrated services, which includes eSupport technologies, electronic software delivery, desktop, and asset management.

Northrop Grumman will provide a regionalized desktop support model based on Information Technology Infrastructure Library/Information Technology Service Management (ITIL/ITSM) practices, protected by integrated security, which will align staff support across multiple agencies.

Northrop Grumman will commence a desktop refresh lifecycle standardization program. Northrop Grumman will also review incident logs and other available information necessary to quickly schedule a refresh process of identified problematic printers to reduce support cost and improve end user print services.

Understanding the Requirements for Desktop Computing Services

Northrop Grumman will meet with VITA desktop support personnel to define and establish the "as-is" support model. Northrop Grumman will procure the System Integration and Test Laboratory (SITL) equipment and tools necessary to establish the baseline of the "to-be" managed service model.

Northrop Grumman will install a centralized desktop and asset management system to provide the Commonwealth with complete insight into the deployed desktop computing IT infrastructure. The desktop refresh initiative will promote a standardized desktop platform to minimize the current disparate desktop environments. The desktop IT staff will continue to support ongoing or new VITA-approved desktop computing related projects, and operations and administration desktop computing services for all VITA-specified end user devices. As Northrop Grumman's initiative-based transition projects are completed, Northrop Grumman will adopt those services (e.g., asset management, electronic software distribution and centralized help desk) into its ongoing desktop support services model as they are extended across the Commonwealth enterprise.

In addition, the Desktop Modernization Program includes enterprise management software and services. The following are key components of Northrop Grumman's enterprise desktop computing lifecycle services model:

- Asset inventory and tracking
- Desktop modernization program—technology refresh
- Centralized software core imaging services
- Centralized software delivery services
- Operations and administration services (day-to-day activities)
- eSupport technology
- Software maintenance activities
- Hardware maintenance activities

Detailed Technical Approach for Desktop Computing Services

The Northrop Grumman desktop solution shall introduce the following IT infrastructure improvements throughout the Commonwealth:

- Standardization of the end user computing platforms and implementation of a desktop modernization program to refresh and uplift the VITA-defined, in-scope end user devices
- Provision of regionalized IT management support hubs and re-orient the desktop support model from an agency-focused to a VITA-centric support model
- Implementation of a technology refresh process that assigns higher refresh priority to identified problematic printers improving end-user print services
- Deployment of a centralized help desk to support incident management and deliver end user support services and dispatch desktop technicians
- Establishment of an SITL in Virginia to test new technologies
- Securitization and lock down the end-user operating environment to minimize desktop service outages due to the installation of nonstandard software or modification of configurations
- Establishment of carry-in and mail-in depot maintenance locations to deliver support services to VITA-defined eligible “roaming” end-users

Asset Inventory and Tracking

Northrop Grumman shall use the following Altiris management suites: server, network, asset, client, and handheld. Altiris is a robust, industry-leading management tool that enables administrators to discover, manage and secure desktop, server, Windows mobile-based pocket PCs, Palm OS, Blackberry handheld assets, and network devices from virtually any location. The system will also track installed desktop software for VITA compliancy, and maintain a software license inventory. Metering software usage will allow unused software licenses to be recovered and minimize unnecessary future software purchases. The asset system will also store software license, asset warranty, maintenance, and associated problem history data that will assist in proactively reducing end-user disruption by identifying problematic equipment.

Northrop Grumman will manage assets through the entire lifecycle, from forecasting and acquisition to retirement, including leasing, maintenance, warranty, contract management, and cost allocation. Northrop Grumman’s technical approach will facilitate the capture of the financial data associated with the asset and provide VITA with a Web-based application to view asset inventory information.

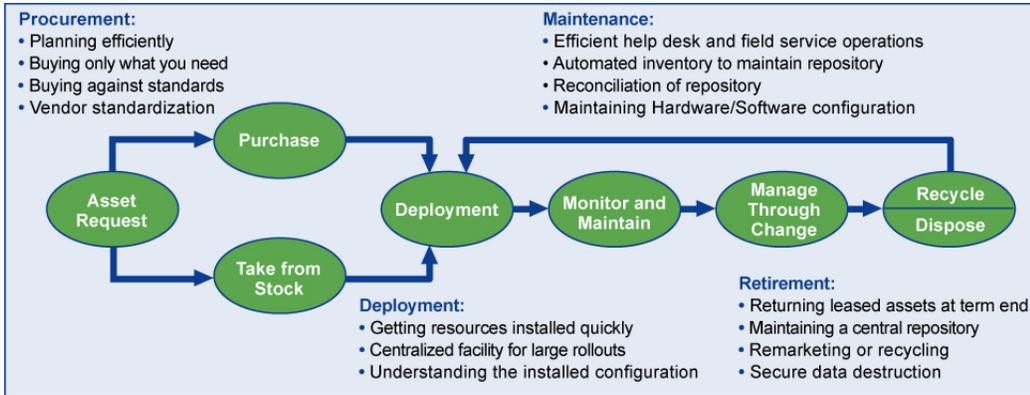


Exhibit 1 Asset Management Process

Technology Refresh

Northrop Grumman will commence a desktop refresh lifecycle after the Service Commencement Date that will replace approximately 47,000 desktops and 10,000 laptops within the first 3 years of the contract, and will load its management agents on the existing approximately 8,000 desktops and 2,000 laptops procured since June 2004. As a value added approach, on alternating refresh cycles, Northrop Grumman will refresh only the system, not including the monitor, because new LCD monitors have a projected lifespan of 10 years.

During start-up and transition phases, Northrop Grumman will review printer-related incident calls and monitor the printer environment to identify problematic printers and assign them a higher replacement priority status. Northrop Grumman will implement a tactical printer refresh strategy by consolidating printer quantities and conducting capacity planning to procure properly sized, network-based printers.

Deleted: Within its base proposal, Northrop Grumman has provided a solution to meet the refresh requirements for desktops, laptops, tablets, and handhelds, as defined in Schedule 3.11.¶

While the refresh cycle suggested by VITA in Schedule 3.11 was a straight five-year cycle for network print devices, Northrop Grumman believes that there are factors equally as important as printer age that must also be factored into a refresh strategy, such as failure rate and technology. Northrop Grumman believes its approach to printer refresh provides a better value to the Commonwealth, while still providing efficient print functionality to the agency users.

The goal of refresh is not a one-for-one refresh, designed to maintain the current volume of network printers. Instead, the goal is to consolidate network printers to a more industry standard ratio to reduce the cost of support, and agency provided consumables and electricity. In a commercial model, the average ratio of network printers to desktop users should be on the order of one network printer to every seven to fifteen users, with a much higher ratio in larger buildings and lower ratios in smaller field offices that may only have a few users. Northrop Grumman based its refresh methodology on what Northrop Grumman believes to be an achievable goal of an 8.35:1 ratio. Based on a seat count of 67,223, this means the target network printer quantity is 8,050. To achieve this goal, in larger buildings, workgroups within a 50-foot radius consisting of up to 20 users can easily share a network printer.

As Northrop Grumman consolidates two or three network printers in a workgroup area with one faster printer, Northrop Grumman will remove the older printers and return them to the Project

Service Center to ensure they are not put into service elsewhere (which is a typical pitfall that sometimes occurs during consolidations). These replaced printers will be either utilized as hot spares or remarketed/recycled, with a percentage of the residual value returned to VITA to help fund future purchases or upgrades.

Based on the above methodology, provided below are the planned and budgeted network printer refreshes within Northrop Grumman’s pricing. Printer refresh has been allocated heavier in years where PC refresh activity is light and vice versa.

A)	Replacement Network Printer - Standard
B)	Replacement Network Printer - Medium
C)	Replacement Network Printer - Large
D)	Replacement Network Printer - Color
E)	Replacement Network Printer - Multifunction - Standard
F)	Replacement Network Printer - Multifunction - Large

		Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12	Yr13	
A)	Qty	300	300	300	500	400	350	200	350	500	400	400	400	400	4800
B)	Qty	400	300	300	500	500	350	200	350	500	300	300	300	300	4600
C)	Qty	400	400	400	500	500	450	300	450	500	450	450	450	450	5700
D)	Qty	70	70	70	70	70	70	70	70	70	70	70	70	70	910
E)	Qty	15	15	15	15	15	15	15	15	15	15	15	15	15	195
F)	Qty	5	5	5	5	5	5	5	5	5	5	5	5	5	65
		1190	1090	1090	1590	1490	1240	790	1240	1590	1240	1240	1240	1240	16270

Based on experiences within Northrop Grumman, as well as with many of its commercial customers, Northrop Grumman have found the best way to deal with the refresh of handheld devices is to allocate a refresh budget based on the age of the devices in the environment, and perform the refresh based on a user request. Northrop Grumman will work with VITA to provide the communication necessary to inform the users of this policy and the proper procedures to request a replacement device. Current PDA users should be permitted to refresh their PDA’s once their device reaches three years or older. When the user desires a refreshed device, they will visit a web page or fill out a form to place a request. The age of their current device will be verified from the asset database, and the request approved and processed if it meets the 3-year (or greater) age requirement.

The user will be shipped a VITA approved, standard PDA to replace their current device, along with a pre-printed return address label to return their legacy PDA to the Project Support Center for remarketing/recycling.

By making the refresh a user-initiated process, those who desire the option of retaining their current PDA for longer than 3 years, may do so. At the end of each year, the amount of PDA’s refreshed will be reported, and 50% of the remaining, unused refresh budget will be allocated to

the next year's budget. The other 50% of the unused budget will be made available to VITA to procure additional PDA's.

The Blackberry (72xx) is the standard PDA replacement device as recommended by the VITA Platform Architecture document.

Northrop Grumman's desktop team will coordinate all refresh projects with the help desk and prepare other necessary support groups. The team will also work with VITA's designated Project Managers or Enterprise Service Directors to provide effective planning, scheduling and control of all resources necessary to execute refresh projects. Northrop Grumman will define and analyze requirements to arrive at a mutually agreeable overall deployment methodology. Northrop Grumman will also provide published documents pertaining to deliverables, milestones, and other refresh project activities to VITA.

During the refresh process, installation teams will gather recovered legacy assets and move them to a VITA-approved staging area at each refresh site. Northrop Grumman will transport the recovered legacy assets from their staged locations to the PSC, where receiving personnel will inspect and scan each asset into the legacy provisioned asset tracking system. Legacy assets will be assigned a unique work order number to facilitate the tracking of the asset throughout the entire disposition process.

Centralized Imaging Services

During start-up and transition phases, Northrop Grumman will work with VITA technical teams to establish the VITA-defined standard end-user device images and eligible customer-specific software images for all desktops, notebooks, laptops, and other in-scope devices. The Northrop Grumman imaging strategy is to create a common operating environment image that will consist of the VITA-approved operating system (Microsoft XP) and all applications common across the Commonwealth. Northrop Grumman will define this as the VITA-approved level 0 image, which will include items such as the following components:

- An office productivity suite such as Microsoft Office Pro 2003
- An e-mail application such as Outlook 2003
- File readers such as Adobe Acrobat Reader
- A desktop management client such as Altiris
- An antivirus client such as Symantec
- Virtual Private Network (VPN) software such as Cisco
- Remote access security software such as ISS Proventia
- Media players such as Quicktime, Real Player or Windows Media Player
- Compact Disc (CD) or Digital Video Device (DVD)-writer software (depending on the configuration)
- File compression software such as Winzip

Eligible customer-specific software images are defined as Level 1 images, which consist of a Level 0 image with the addition of agency or business-specific computing software packages. Images will be created in the SITL. Workstations are dedicated to provide the test bed for imaging activities, and image specialists manually load the operating system and applications following detailed installation instructions and checklists. Functionality is verified using a test

procedure and checklist. All steps are documented and verified to confirm they are thorough and complete. Once approved and documented, the image is named, provided an image index identifier, and loaded into the image repository. Images will be deployed and distributed either electronically using Altiris over the network, or on DVD media, depending on location and site connectivity.

Changes to any of the VITA-approved images must be in accordance with VITA's approved standards and change management process. Northrop Grumman change control process will define the procedures followed to coordinate and provide implementation approval and scheduling to effect change at the modular level. Northrop Grumman will manage all image deployment projects using formal project management tools and methodologies, and apply the principles of ITIL/ITSM change and configuration management practices.

VITA-approved images will be stored in an online repository to be used with electronic image deployment system, which is specifically designed for both image management and remote distribution. Alternatively, DVD media may be used to distribute images on a smaller scale, or where network connectivity limits timely transfers. Northrop Grumman's asset management and tracking tool will check workstation configuration to ensure software compliance. An image specialist will coordinate all image deployment projects with the help desk and prepare other necessary support groups to minimize any end-user disruption.

Imaging and software packaging specialists will monitor software vendor websites and e-mail lists to review software product upgrades, patches or available hot fixes to investigate and publish their applicability within the Commonwealth IT environment for VITA's approval.

Centralized Electronic Software Delivery Services

Northrop Grumman software packagers will evaluate existing VITA packages, and create the packages and scripts to deliver system images, software products, patches, and upgrades to the workstations. Software packagers will also perform unit testing, system integration testing, Local Area Network (LAN) connectivity testing, load testing, and application interconnectivity testing on VITA-designated versions of hardware and software. Northrop Grumman will work with VITA and agency internal software developers to meet software packaging requirements. Northrop Grumman will deploy core software images on in-scope workstations and eligible end-user devices using its central electronic software distribution system.

Operations and Administration Services (Day-to-Day Activities)

The Northrop Grumman desktop computing services team will provide normal operations and administration services that include performing Install, Move, Add, and Change (IMAC) services on a scheduled basis to install new hardware or software or change an existing configuration. All IMAC service requests are placed through Northrop Grumman's help desk. All IMAC activities will be coordinated with the help desk and prepared, when appropriate, with other necessary support groups to minimize any end-user disruption. Desktop technicians will notify an end-user of the date and time of planned arrival and attempt to diagnose the problem over the phone.

eSupport

Northrop Grumman will implement eSupport technology to empower the end user to perform self-remediation tasks and to automate many of the current IMAC tasks. The SupportSoft eSupport Suite offers a "Tell me, Show me, Do-it-for-me" option so users can choose their

preferred method of self remediation. Northrop Grumman will use knowledge authors and technical specialists to populate this tool, and keep it current as the environment evolves.

Software Maintenance Activities

Northrop Grumman will deliver a desktop software support and maintenance solution for software products from the VITA-approved software standards list. The asset tracking system will identify nonstandard and unauthorized installed software during its scheduled configuration check on each workstation. Northrop Grumman will monitor and track software manufacturers' websites for any new product releases, updates, upgrades or hot fixes and communicate its recommended course of action to designated VITA technicians. All software upgrades, patches, or hot fixes will be applied and fully tested in the SITL; findings will be published and made available to VITA to review and approve prior to any production deployment.

Northrop Grumman will perform all installations and configurations in accordance with VITA's approved standards and change management procedures using an electronic software distribution system. Northrop Grumman will coordinate all software maintenance activities with the help desk and prepare other necessary support groups to minimize any end-user disruption. A Web portal will provide VITA with full access to all inventoried software asset information.

Software maintenance support will be performed by a help desk analyst or from a dispatched desk-side technician when the software severity issue requires subject matter expert support services. Desktop technicians will also work with third-party software vendors to effect software remediation.

Hardware Maintenance Activities

Northrop Grumman will deliver depot carry-in hardware maintenance and desk-side support services. Northrop Grumman's technical approach will provide hardware maintenance support for all VITA-specified, in-scope desktop, laptop, hand-held devices, scanners, networked attached copiers, multifunctional print devices, networked printers, and locally attached peripheral devices.

Northrop Grumman will implement a training program to keep desktop support personnel knowledgeable and stay current on emerging technologies or enhancements on the equipment supported, including hardware and software maintenance. Northrop Grumman's support team will also interface with hardware manufacturers as needed for planning and problem resolution.

Northrop Grumman's spare parts inventory will be mainly located in its PSC, with appropriate levels of spares maintained regionally to support Service Levels. Spare part inventories are maintained in an online database, with a replenishment process based on stocking levels and warranty status.

Upon completion of any desktop support service, if changes are made to the IT environment, desktop support engineers will update the configuration management database. In compliance with the VITA Standard Operating Procedures Manual, and Northrop Grumman's commitment to continuous improvement, following the completion of a desktop support service, Northrop Grumman will have the end-user acknowledge that the service request or problem remediation activity was completed accurately.

General Desktop Computing Services

Northrop Grumman's desktop computing services solution will respond to remedial service requests for VITA-defined inventories. A combination of phone, Web and wireless technologies for communication provides the most current information to VITA and Northrop Grumman about the status of any problem or service request. During the startup phase, Northrop Grumman will meet with VITA desktop support personnel to determine their work scope, and identify redundant support services among collocated staff to enable Northrop Grumman to better regionalize the management of desktop support services. **Exhibit 2** illustrates the proposed regional management hubs; Northrop Grumman will meet with VITA during the startup phase to mutually agree upon the service regions.

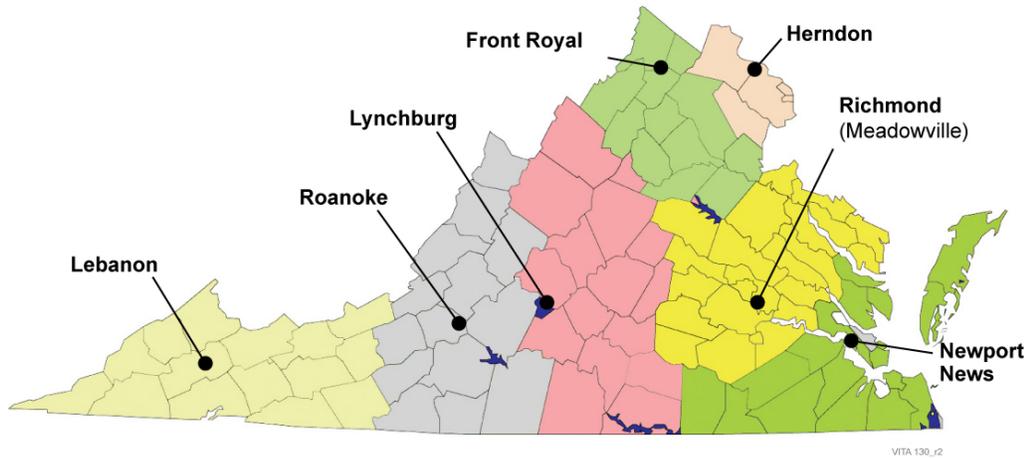


Exhibit 2 Management Hubs

Northrop Grumman will establish a regional desktop computing support management hubs to deliver desktop services to multiple agencies.

Project Support Center

The PSC will streamline the desktop refresh process by establishing a successful, repeatable process that will focus on reducing the cost associated with redundant agency-centric sparing and asset warehousing. It will support Northrop Grumman's desktop modernization program throughout the life of this contract.

Northrop Grumman will apply the principles of ITIL through the implementation of the following ITIL/ITSM-based change and configuration management practices:

- Incident management
- Configuration management
- Change management
- Service management

The Northrop Grumman Desktop Support Team will work closely with Northrop the Cross Functional Services Office to ensure common processes, procedures and policies are implemented and fully documented across all teams.